was due to the definite variable influences on the secretion by psychic and emotional stimuli so prevalent in the group of emotionally unstable individuals encountered. Doctor Koehler has apparently disposed of these factors to his satisfaction in his presentation of this study. All have seen cases of starch intolerance with frothy, fermentative stools, and with definite clinical evidence of marked indigestion, who, when away from their family and business worries, have metabolized starch in an adequate and satisfactory manner. Functional deficiencies, as determined by such laboratory findings, should be more constant.

I agree with Doctor Koehler that substitution therapy, using the various enzyme and digestive concentrates, is very disappointing. In order to get any benefit, even in the most evident case, much larger doses than usually used are necessary, and then only with preparations of a proved potency. Good results have been reported by using a properly prepared potent preparation of pancreatic juice in proved cases of pancreatic insufficiency. Ivy reports good results with large doses of pancreatin of proved potency in similar cases. Therefore, it seems to me that if the deficiency is real and not transitory, preparations of these concentrates, properly prepared and of known potency, would be of a greater benefit to these functional indigestions.

When we have further studies of the small intestine physiology, and especially its motility, made available most probably by new and improved roentgen studies, with a more skillful guiding and helping of these individuals to adjust themselves to their handicaps and to live within their capabilities, then and only then will our therapeutic results with these various functional indigestions and disturbances in motility of the small bowel be satisfactory.

THE ENDOCRINES AND BEHAVIOR IN PUBERTY*

By CLARA H. SPALDING, M.D.
Richmond

DISCUSSION *by Olga Bridgman, M. D., San Francisco; E. Kost Shelton, M. D., Los Angeles.*

THE child from eleven to sixteen is here discussed. The reasons for believing this group worthy of special consideration are threefold:

First: The universality of this critical time in every child's life.

Not every child will have broken bones or acute infection; but each child will, inevitably, have a period of puberty with its problems.

Second: Because of the importance of this period to the child himself, physically and emotionally.

Third: Because of the importance of the adjustment of the child toward society; the social economic value.

THE PHYSICAL CONSIDERATION

Pubescence interests us primarily because of its physiological changes, and the underlying anatomical changes, which means consideration of the endocrines.

The sum total of the child's previous life gradually brings to bud and blossom the gonadal system; the sex hormones of the pituitary gland, plus gonadal activity.

RÔLE OF THE PITUITARY

Regarding the pituitary as the keystone of the arch, we may pass lightly over the products of the posterior lobe, simply naming them for completeness:

1. That which affects the liver and so aids in fat metabolism.
2. That which aids the eye in mydriasis.
3. Three which affect the circulatory system:
   (*a*) Raises blood pressure.
   (*b*) Aids coagulability.
   (*c*) Controls capillary tone.
4. Two which bear upon the renal system:
   (*a*) Diuresis.
   (*b*) Antidiuresis.
5. Two which affect the uterus:
   (*a*) Alphahypophamin, the pressor.
   (*b*) Betahypophamin, the oxytocic principle.
6. Two which bear upon the digestive system:
   (*a*) One to the stomach, an inhibitor or gastric secretion.
   (*b*) One affecting the peristaltic action of the intestine.

One product of the pars intermedia:

1. Intermedia.

Then those of the anterior lobe, of whose eight products we mention seven briefly:

1. Parathyreotropic, parathormone.
2. Thyreotropic, thyrodin.
3. Suprarenalatropc, adrenalin or cortin.
4. One with galactagogue action.
5. Pancriaticotropic, insulin activator.
6. One affecting general growth.
7. One affecting skeletal growth, specifically.
8. The gonadotropic group, which we shall consider more closely.

GONADOTROPIC GROUP

Of the gonadotropic group, we have:

Prolan A, of which we have a male and a female entity:
1. That which affects the testicle, and whose specific function is the determination of spermatogenesis.
2. That which affects the follicle of the ovary—folliculin.

Prolan B, which, likewise, consists of a male and a female entity, as the case may be:
1. That which affects the testicle androtin.
2. That which affects the corpus luteum, progestin.

When the gonadotropic hormones mature and function normally, we have the group of secondary sex characteristics develop normally. If this physiological function be normal, we have the resultant normal emotional response on the part of the child, which predetermines that child's attitude toward life and society.

GROUPING OF CHILDREN

Children may, grossly, be divided into three groups:

First: The narrow top band of the precocious.

These children require great tact and understanding. Their ability to lead can be guided correctly, or they may easily develop their smart-aleck tendencies to be leaders of gangs.

Second: The bottom, much wider band of subnormals. The gradations range from:

1. The mildly retarded.

2. The feeble-minded—high-grade and low-grade morons. These are a definite menace to society because they are not adjusted, and are not capable of adjustment to the social economic system of today, with its complex problems.

The only hope for these two groups is early recognition, correct diagnosis, and adequate treatment of their endocrine dyscrasias.

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* Read before the Pediatrics Section of the California Medical Association at the sixty-sixth annual session, Del Monte, May 2–5, 1937.

3. The twilight zone, the very low-grade mentals: the imbeciles and the idiots. Their only solution is institutionalization.

But many cretins and Mongolian idiots could have been spared this fate had their endocrine needs been recognized early. That would have been both humane and economical.

Third: That broad, middle band of good normals. Fortunately, these constitute the vast majority. From this group will always come our substantial citizens of the future.

They need no special medical attention, only understanding and sensible training.

EMOTIONAL REACTION OF THE PUBESCENT CHILD

With the pubescent child, bear in mind that he is undergoing an emotional crisis. He is confused, feels frustrated. He cannot understand himself, therefore he thinks nobody understands him. He is becoming an independent social unit with definite opinions. He is becoming an adult, so what he needs is someone to regard his problems as dignified and important, which is every adult's due.

SEX INSTRUCTION

Sex instruction should be provided. This may well be given by the parents, if they are intelligent, if they have the child's confidence, and if they are themselves instructed. It may be given by the family physician, if he is sufficiently close to the child to impress the child that he is really vitally interested in his welfare. Or it may be imparted at school, which can much better give sex-hygiene instruction than sex instruction.

Sex instruction, to be worth while, must be given not too early in life; it must not be too legendary nor romantic; it must be clear, and it must be scientifically sound.

IN CONCLUSION

The child who becomes maladjusted, in the majority of cases, follows this rationale:

First: Endocrinopathy.

Second: Development of undesirable traits and habits.

Third: Early juvenile delinquency.

Fourth: Criminality.

Endocrine disorders are amenable to treatment and are correctible, if diagnosed correctly, and treated early and adequately.

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DISCUSSION

OLGA BRIDGMAN, M.D. (University of California Hospital, San Francisco).—For many years it has been the high desire of those of us concerned with various human problems to find some one basic cause which could be attacked in order, at one stroke, to eliminate such problems as feeblemindedness, crime, and mental disorder. Lombroso felt that he had hit upon such a fundamental cause in developing his theories of degeneracy. From time to time other panaceas have been advanced. Now endocrinology, still to a large extent in its very experimental stage, is perhaps a refuge for the very optimistic. What may be accomplished in the future by endocrine therapy can scarcely be predicted with any scientific accuracy, but some of us who have seen the complete failure of such treatment in scores of cases of mongolian imbecility, and have been disappointed in the use of thyroid therapy even in apparently clear cases of childhood myxedema, tend perhaps to be too pessimistic. It may be true that all maladjustment is primarily endocrine, but there are many other contributing causes of a social and psychological sort on which we must work, pending the discovery of any proved first cause.

E. KOST SHELTON, M.D. (921 Westwood Boulevard, Los Angeles).—Volumes could be written, in fact some have been written and very badly, on glands and personality. Suffice it to say, that those which I have read, including the article by Doctor Spalding, put too much emphasis on the glands of internal secretion as the direct cause of the personality pattern of the child.

Everyone will concede, in this day and age, that the pituitary is the regulator of numerous physiologic functions; but to predict just how many abnormal behavioristic leanings can be attributed to dysfunction of this organ *per se*, is a hazardous guess. It has always appeared strange to me that those suffering from demonstrable pituitary disorder, or whose pituitary dysfunction has been verified at autopsy, appeared to show the least change in personality pattern. To me the abnormal behaviorisms incident to tallness in girls, shortness in boys, genital hypoplasia, obesity, extreme thinness, etc., while real, are somatopsychic inferiorities, for which children compensate in various ways, mostly badly, rather than the result of hormonal imbalance *per se*. Some children compensate atrociously for these unsightly mechanisms, but I have never found a pill or a shot which would cure them without also some sensible psychologic readjustment. This treatment is frequently applied subconsciously by the physician during his course of physical rehabilitation.

Almost every day, when handling a large volume of work of this nature, one sees children with severe constitutional inferiorities, minor birth injuries, developmental cerebral defects, children with doting, foolish mothers or improvident fathers, who are being treated for their mental quirks with various endocrine products, especially new pituitary preparations that are sometimes in a very inadequate form and dosage.

Doctor Spalding's paper shows sincerity of purpose, and no doubt she knows all of these things, selects her patients carefully, and treats them well; but many busy practitioners whom this article will reach know little of the subject and thirst for knowledge. I am afraid that her article, interpreted dogmatically, would encourage rather than curtail the present indiscriminatory practice as regards the endocrine treatment of abnormal behaviorisms of the child.

ABDOMINAL ABSCESSES: THEIR TREATMENT

By THOMAS O. BURGER, M.D.
AND
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DISCUSSION *by Robert A. Scarborough, M.D., San Francisco; Bon O. Adams, M.D., Riverside; Joseph J. O'Hara, M.D., San Diego.*

ANY method which promises to reduce the mortality from infections of the peritoneum deserves the attention of every surgeon. The purpose of this paper is to call attention to certain precautions in the treatment of abscesses in and adjacent to the abdominal cavity. The procedures to be described are not new,[1] but are so generally neglected, and in our hands have proved so potent in saving life, that it is felt worth while again to bring them to the attention of all surgeons.

TWO TYPES OF LOCALIZED ABSCESSES

Two general types of localized abscesses may be recognized: (1) Those following an inflammation